Motorola® HOME Radio

SERVICE MANUAL

MODEL
7XM21
CHASSIS
HS-218

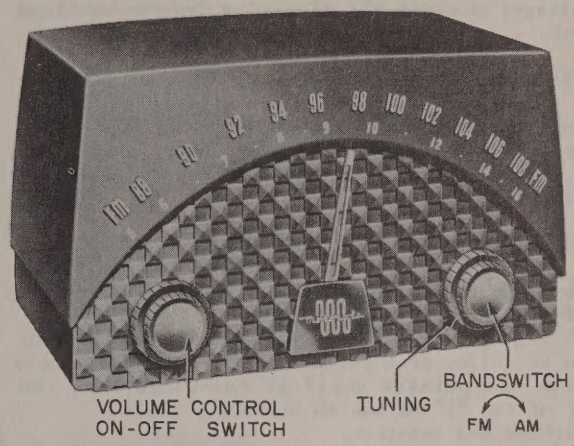
GENERAL INFORMATION

TYPE - FM-AM table model receiver

TUNING RANGE - AM 535 to 1620 Kc IF - 455 Kc
FM 88 to 108 Mc IF - 10.7 Mc

TUBE COMPLEMENT - 12BA6 - FM-AM RF Amplifier
12BA7 - FM-AM Converter
12BA6 - FM-AM IF Amplifier
12BA6 - FM IF Amplifier
19T8 - FM Ratio Detector, AM Detector & 1st Audio Amp
50C5 - Power Amplifier
Rectifier - Selenium type

POWER SUPPLY - 117V AC or DC, 40 watts



INSTALLATION & OPERATING INSTRUCTIONS

ANTENNA & GROUND

No outside antenna or ground is required for standard broadcast (AM) reception. A loop antenna for broadcast reception is located at the rear of the cabinet.

An FM antenna, built into the power cord, eliminates the need for an external FM antenna when the receiver is used in normal FM service areas such as are found in and for a few miles around metropolitan areas. In 'fringe' or weak signal areas, improved FM reception can be obtained by using an FM antenna mounted as high as possible. The FM antenna should be connected through a 300 ohm twin transmission line to the two screws on the rear of the set. Refer to the instructions on the antenna panel for proper transmission line connections. Orient the antenna so that maximum volume of FM station or stations is obtained.

NOTE: When the built-in FM antenna is used, connect the green lead from the chassis to the **RIGHT-HAND** terminal on the loop. Since the FM antenna is incorporated in the power line cord, stretch the line cord to its full length to obtain strong FM reception.

CAUTION: Do not connect antenna or chassis to water pipe, radiator, or other ground.

CONTROLS

POWER SWITCH & VOLUME CONTROL. The power switch and volume control are combined and are operated by the left-hand knob.

BANDSWITCH. The small (inner) right-hand knob selects FM or AM reception. Rotate the knob clockwise for AM or counterclockwise for FM.

TUNING. Tuning of both FM and AM is accomplished with the large (outer) right-hand knob. The standard broadcast dial (AM) is read in kilocycles by adding two zeros to the figures. The frequency modulation (FM) dial scale is read in megacycles (88 to 108).

Tuning of FM stations should be done very carefully, for best sound reproduction, not necessarily for strongest volume received.

4545 AUGUSTA BOULEVARD Motorola Inc. CHICAGO 51, ILLINOIS

PART NO. 54P600253 Price 15 Cents PRINTED IN U. S. A.

SERVICE NOTES

OPERATING NOTES:

The chassis of this receiver is connected directly to the power line. When operating the chassis (from AC line) outside of its cabinet, use an isolation transformer between the power line and the receiver to reduce the possibility of electrical shock. If an isolation transformer is not available, check the AC voltage between the chassis and the bench ground. If there is any indication of voltage, reverse the line plug before handling the set.

When operating the receiver from an AC power line, reception can sometimes be improved by reversing the plug in the power outlet. If the receiver does not operate from a DC power line, after being turned on for a few minutes, reverse the plug in the power outlet.

TO CALIBRATE DIAL:

1. Turn the tuning knob counterclockwise until the end of its travel is reached.
2. Through the hole in the bottom of the cabinet, loosen the Allen head setscrew in the pointer sleeve.
3. Move the pointer until it coincides with the center of the "5" on the AM broadcast scale.
4. Tighten the setscrew.

NOTE: If the pointer is accidentally moved by hand, it will be released from a detent in the pointer collar assembly, and no damage to the tuning mechanism will result. To reset the pointer, merely move it back and forth until it again engages in the detent.

TO REMOVE POINTER:

1. Remove the two screws holding the medallion, from beneath the cabinet.
2. Turn the tuning knob until the pointer reaches the low frequency end of its range.
3. Through the hole in the bottom of the cabinet, insert an Allen head wrench into the setscrew in the pointer sleeve and hold the wrench. This keeps the sleeve from turning and breaking the dial string.
4. Remove the nut and washers from the front of the pointer.
5. Pull off the pointer.

TO REMOVE CHASSIS FROM CABINET:

1. Remove the pointer, as described above.
2. Pull off the control knobs.
3. From the rear of the cabinet, remove the two screws holding the chassis to the cabinet.
4. Remove the two split plugs at the top of the loop, which hold the loop to the cabinet.
5. Slide the chassis from the cabinet.

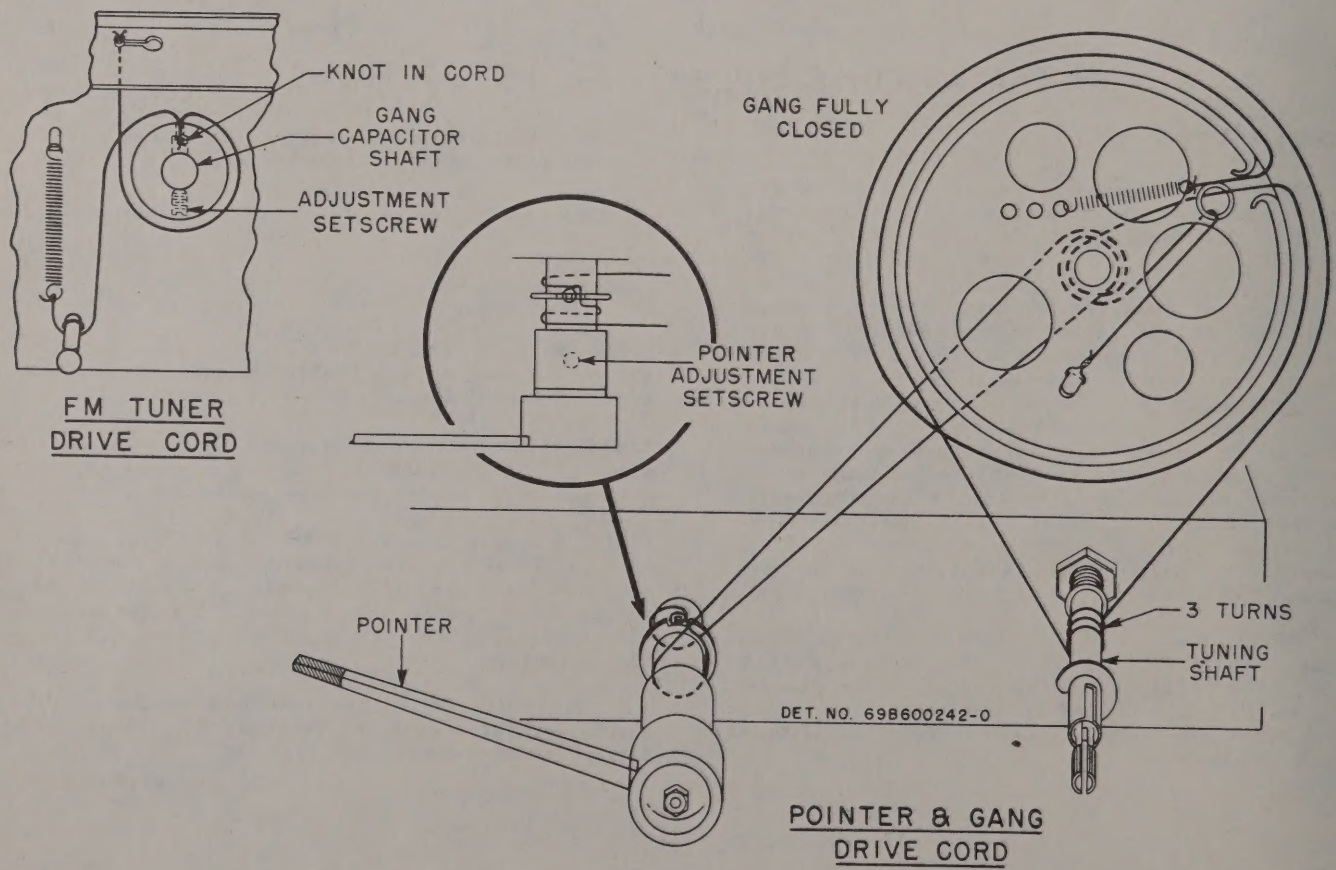


FIGURE 1. STRING DRIVE DETAIL

ALIGNMENT

GENERAL INFORMATION

1. Maximum performance can be obtained only if extreme care is exercised during alignment.

2. If AC power is used, it is recommended that an isolation transformer be placed between the power line and the receiver during alignment to avoid hum and electrical shocks. If an isolation transformer is not available, connect the low side of the signal generator to the receiver chassis through a .1 mf capacitor.

3. Use a small fibre screwdriver for aligning the IF transformers.

4. Refer to Figure 2 for the location of all alignment trimmers and cores.

5. As the stages are brought into alignment, reduce the signal generator output to a low value to avoid overloading the receiver.

ORDER OF ALIGNMENT AND EQUIPMENT REQUIRED

1. Broadcast Band IF & RF Alignment
   a. 455 to 1620 Kc AM signal generator
   b. Low range output meter

2 (A) FM Band IF & RF Alignment (Preferred Method)
   a. 10.7 to 108 Mc FM signal generator
   b. Oscilloscope

(B) FM Band IF & RF Alignment (Alternate Method)
   a. 10.7 to 108 Mc signal generator (unmod.)
   b. Low range DC electronic voltmeter.

BROADCAST BAND - IF & RF ALIGNMENT

1. Connect the AM signal generator as in chart below, with 400 cycle, 30% modulation.

2. Connect the output meter across the speaker voice coil. Throughout alignment reduce the generator output to a level which produces less than .40 volts across the voice coil, to avoid overloading the receiver.

3. Set the bandswitch to the AM position.

4. Turn the receiver volume control to maximum.

5. Proceed as shown in the following chart.

STEP	DUMMY ANTENNA	GENERATOR CONNECTION	GENERATOR FREQUENCY	GANG SETTING	ADJUST	REMARKS
IF ALIGNMENT						
1.	.1 mf	Grid of conv. V-2 (pin 7, 12BA7)	455 Kc	Fully opened	1, 2, 3 & 4 (IF cores)	Adjust for maximum.
RF ALIGNMENT						
2.	.1 mf	Grid of conv. V-2 (pin 7, 12BA7)	1620 Kc	Fully opened	5 (BC osc)	Adjust for maximum.*
3.	-	Across radiation loop**	1400 Kc	Tune in signal	8 (BC ant)	Adjust for maximum.

4. If, after the receiver has been aligned as above, it is found to be badly off calibration, it will be necessary to adjust oscillator core (7) as follows: connect the generator to the grid of the converter tube and, with the gang fully closed, adjust core (7) at 535 Kc. It is advisable to repeat the oscillator adjustments at 1620 Kc and 535 Kc several times until the tuning range is correct. Core (7) has been pre-set at the factory and normally should require no retuning.

* If difficulty is encountered in tuning trimmer (5), adjust trimmer (6) to ½ turn from tight.

**Connect generator output across 5" diameter, 5 turn loop and couple inductively to receiver loop. Keep loops at least 12" apart.

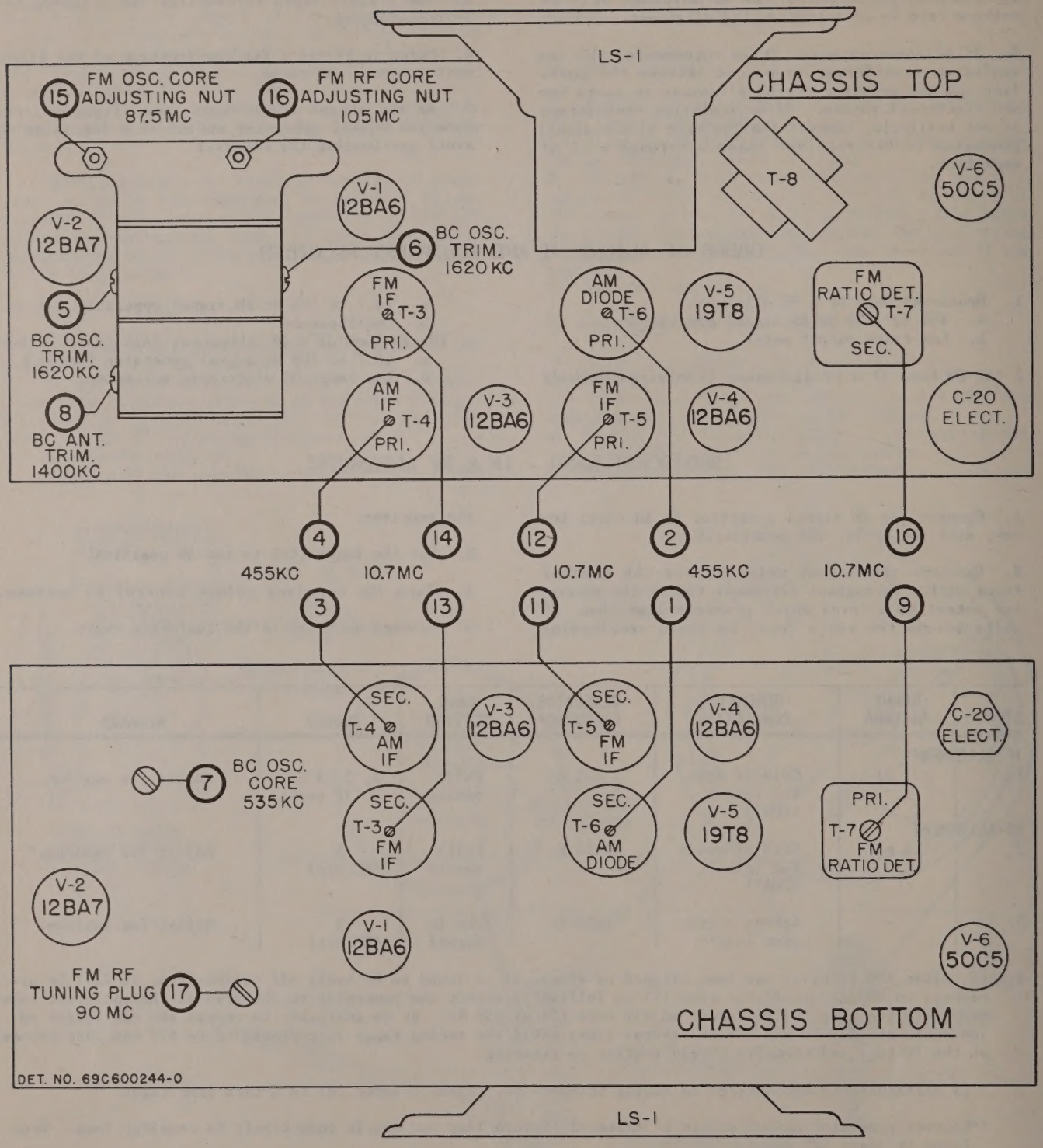


FIGURE 2. TUBE & TRIMMER LOCATIONS

FM BAND - IF & RF ALIGNMENT (PREFERRED METHOD)

1. The following FM alignment procedure, using an FM signal generator and an oscilloscope, is to be preferred because the actual response pattern may be observed on the scope and adjusted for best symmetry and maximum amplitude.

2. Connect the vertical input terminals of the oscilloscope between the chassis and the junction of resistor R-24 (33K) and capacitor C-29 (1000 mmf).

3. Connect the FM signal generator sync voltage output terminals, through a phase shifting network, to the horizontal input terminals of the scope, as in Figure 3. (Other values of resistance and capacitance may be required, depending upon the scope). The phasing control should be adjusted to give only one trace on the scope. **NOTE:** If the FM generator has a built-in phase control, the phase shifting network is not necessary.

4. Set the bandswitch to the FM position.

5. Throughout alignment, reduce the generator output to keep the signal just above the noise level, to avoid overloading the receiver.

6. Proceed as shown in the following chart.

STEP	DUMMY ANTENNA	GENERATOR CONNECTION	GENERATOR FREQUENCY	TUNER SETTING	ADJUST	REMARKS
IF ALIGNMENT						
1.	1000 mmf	Grid of 2nd IF Amp V-4 (pin 1, 12BA6)	10.7 Mc ±100 Kc dev.	Fully opened	9 (ratio det pri)	Adjust for maximum amplitude of pattern.*
2.	1000 mmf	Grid of 2nd IF Amp V-4 (pin 1, 12BA6)	10.7 Mc ±100 Kc dev.	Fully opened	10 (ratio det sec)	Adjust for symmetrical curve, as shown in Figure 4.
3.	-	-	-	-	-	Repeat steps 1 & 2 for maximum amplitude and best symmetry.
4.	1000 mmf	Grid of 1st IF Amp V-3 (pin 1, 12BA6)	10.7 Mc ±100 Kc dev	Fully opened	11 & 12 (2nd IF sec & pri)	Adjust for maximum amplitude of pattern.*
5.	1000 mmf	Grid of conv. V-2 (pin 7, 12BA7)	10.7 Mc ±100 Kc dev	Fully opened	13 & 14 (1st IF sec & pri)	Adjust for maximum amplitude of pattern.*
6.	1000 mmf	Grid of conv. V-2 (pin 7, 12BA7)	10.7 Mc ±100 Kc dev	Fully opened	11, 12, 13 & 14	Readjust for maximum amplitude and best symmetry.
RF ALIGNMENT						
7.	270 ohms	FM terminals on loop	87.5 Mc ± 22½ Kc dev	Fully closed	15 (osc adj nut)	Adjust for maximum amplitude of pattern.*
8.	-	-	-	Fully closed	16 (RF adj nut)	Turn counterclockwise until core is at bottom of pipe, then turn four turns clockwise.
9.	270 ohms	FM terminals on loop	90 Mc ± 22½ Kc dev	Tune in signal	17 (RF tuning plug)	Adjust for maximum amplitude of pattern.*
10.	270 ohms	FM terminals on loop	105 Mc ± 22½ Kc dev	Tune in signal	16 (RF adj nut)	Adjust for maximum amplitude of pattern.*
11.	-	-	-	-	-	Repeat steps 9 & 10 until no further adjustment is necessary.

*An output meter across the speaker voice coil will also indicate maximum amplitude. It should not be used in place of the scope, however, since it will not show symmetry of the curve.

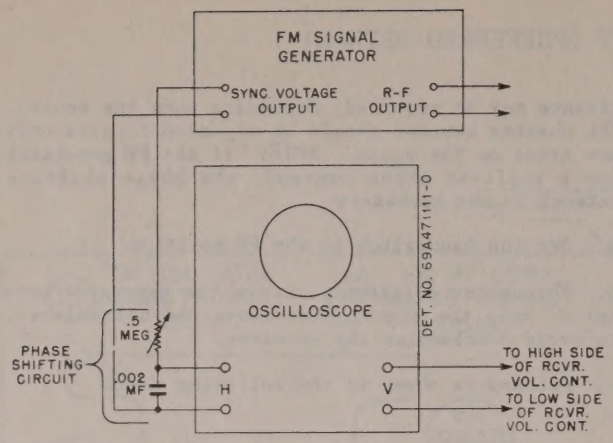


FIGURE 3.

FM SIGNAL GENERATOR & OSCILLOSCOPE HOOK-UP

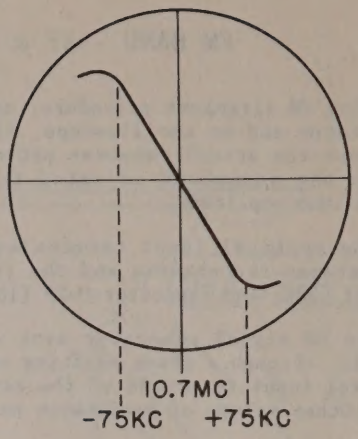


FIGURE 4.

RATIO DETECTOR WAVEFORM

FM BAND - IF & RF ALIGNMENT (ALTERNATE METHOD)

1. The following procedure for FM alignment, with an unmodulated carrier generator and a DC electronic voltmeter, is not as desirable as the preceding method; but it may be used if no FM generator is available.

2. Connect the signal generator as in chart below, with no modulation.

3. Set the bandswitch to the FM position.

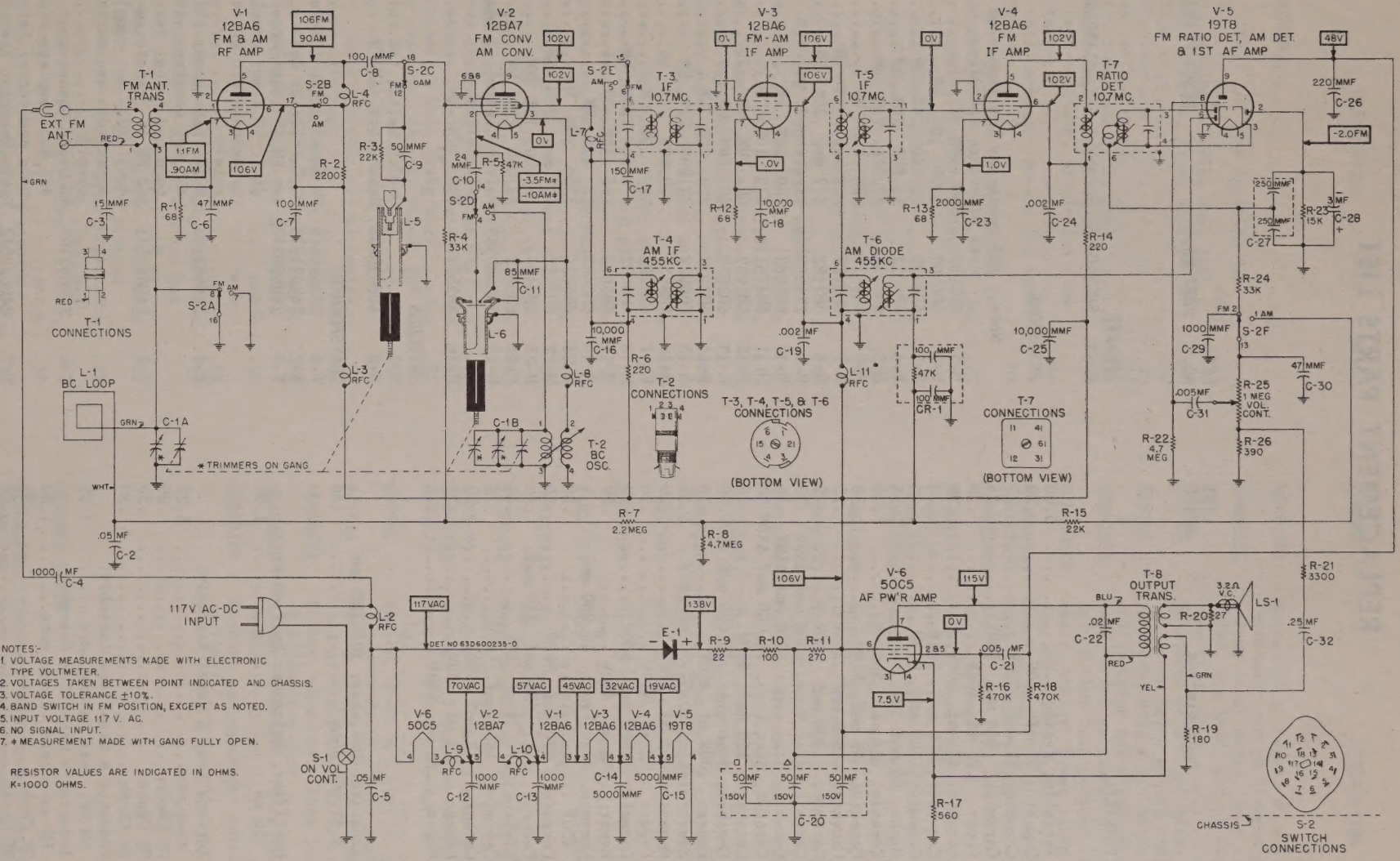
4. Except in step 2 below, connect the electronic voltmeter across resistor R-23 (15K) in the ratio detector stage.

5. Throughout alignment reduce the signal generator output to a value which produces no more than a 5 volt rise above no signal voltage, to avoid overloading the receiver.

6. In step 2 below, connect two 100K ohm resistors in series across R-23. Connect the electronic voltmeter between the volume control side of resistor R-24 (33K) and the junction of the two 100K resistors, with the low side of the meter at the 100K resistors.

7. Proceed as shown in the following chart.

STEP	DUMMY ANTENNA	GENERATOR CONNECTION	GENERATOR FREQUENCY	TUNER SETTING	ADJUST	REMARKS
IF ALIGNMENT						
1.	1000 mmf	Grid of conv. V-2 (pin 7, 12BA7)	10.7 Mc	Fully opened	9, 11, 12, 13 & 14 (IF cores)	Adjust for maximum.
2.	1000 mmf	Grid of conv. V-2 (pin 7, 12BA7)	10.7 Mc	Fully opened	10 (ratio det sec)	Adjust for zero. (Connect meter as in step 6 above).
RF ALIGNMENT						
3.	270 ohms	FM terminals on loop	87.5 Mc	Fully closed	15 (osc adj nut)	Adjust for maximum.
4.	-	-	-	Fully closed	16 (RF adj nut)	Turn counterclockwise until core is at bottom of pipe, then turn four turns clockwise.
5.	270 ohms	FM terminals on loop	90 Mc	Tune in signal	17 (RF tuning plug)	Adjust for maximum.
6.	270 ohms	FM terminals on loop	105 Mc	Tune in signal	16 (RF adj nut)	Adjust for maximum.
7.	-	-	-	-	-	Repeat steps 5 & 6 until no further adjustment is necessary.



NOTES:-
1. VOLTAGE MEASUREMENTS MADE WITH ELECTRONIC TYPE VOLTMETER.
2. VOLTAGES TAKEN BETWEEN POINT INDICATED AND CHASSIS.
3. VOLTAGE TOLERANCE ±10%.
4. BAND SWITCH IN FM POSITION, EXCEPT AS NOTED.
5. INPUT VOLTAGE 117 V. AC.
6. NO SIGNAL INPUT.
7. * MEASUREMENT MADE WITH GANG FULLY OPEN.

RESISTOR VALUES ARE INDICATED IN OHMS.
K=1000 OHMS.

FIGURE 5. SCHEMATIC DIAGRAM

REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	LIST PRICE
CHASSIS PARTS - ELECTRICAL			
CAPACITORS			
C-1A,B	19B691877	Variable: 2-gang	3.00
C-2	8R9821	Paper: .05 mf 200V	.20
C-3	21K470323	Ceramic: 15 mmf 500V	.25
C-4	21K478410	Ceramic: 1000 mmf 500V	.25
C-5	8K470606	Paper: .05 mf 400V	.25
C-6	21K77373	Ceramic: 47 mmf 500V	.20
C-7	21B77286	Ceramic: 100 mmf 500V	.20
C-8	21B77286	Ceramic: 100 mmf 500V	.20
C-9	21R2743	Mica: 50 mmf 5% 300V	.25
C-10	21K28816	Ceramic: 24 mmf 500V	.20
C-11	21A690688	Ceramic: 85 mmf 500V	.30
C-12	21K478410	Ceramic: 1000 mmf 500V	.25
C-13	21K478410	Ceramic: 1000 mmf 500V	.25
C-14	21A470789	Ceramic, disc type: 5000 mmf 450V	.30
C-15	21A470789	Ceramic, disc type: 5000 mmf 450V	.30
C-16	21K482726	Ceramic, disc type: 10,000 mmf 450V.	30
C-17	21K691948	Ceramic: 150 mmf 500V	.20
C-18	21K482726	Ceramic, disc type: 10,000 mmf 450V.	30
C-19	8K9824	Paper: .002 mf 400V	.20
C-20	23B690539	Electrolytic: 50-50-50 mf/150V..	1.65
C-21	8R9813	Paper: .005 mf 600V	.20
C-22	8R9802	Paper: .02 mf 400V	.20
C-23	21K790912	Ceramic: 2000 mmf 500V	.20
C-24	8K9824	Paper: .002 mf 400V	.20
C-25	21K482726	Ceramic, disc type: 10,000 mmf 450V	.30
C-26	21K77375	Ceramic: 220 mmf 500V	.20
C-27	21B484337	Ceramic, dual: 250 mmf, 250 mmf.	.30
C-28	23K690543	Electrolytic: 3 mf 50V	.65
C-29	21K478410	Ceramic: 1000 mmf 500V.....	.25
C-30	21K77373	Ceramic: 47 mmf 500V	.20
C-31	8R9813	Paper: .005 mf 600V	.20
C-32	8R9810	Paper: .25 mf 100V	.25
CAPACITOR-RESISTOR			
CR-1	21A473040	Capacitor-Resistor: 100-100 mmf & 47,000 ohms	.40
RECTIFIER			
E-1	48B482807	Rectifier, selenium: half-wave; 150 ma	1.90
COILS			
L-1	24C692186	Antenna Loop & Panel Assembly: complete.....	1.25
L-2	24A692148	RF Choke	.20
L-3	24A692148	RF Choke	.20
L-4	24A484025	RF Choke	.20
L-5	24C690584	Inductor & Capacitor Assembly: FM RF; less tuning core.....	1.35
L-6	24K600519	Inductor & Capacitor Assembly: FM osc; less tuning core.....	1.50
L-7	24A691847	RF Choke	.05
L-8	24A791081	RF Choke	.20
L-9	24A692148	RF Choke	.20
L-10	24K780128	RF Choke	.20
L-11	24A692148	RF Choke	.20

REF. NO.	PART NO.	DESCRIPTION	LIST PRICE
SPEAKER			
LS-1	50C600135	Speaker: 5-1/4" PM; 3.2 ohm VC	3.60
		exch	2.70
RESISTORS			
		Note: All resistors are insulated carbon type unless otherwise specified.	
R-1	6R2039	68 10% ½W .....doz	1.00
R-2	6R6069	2200 10% ½W .....doz	1.00
R-3	6R6028	22,000 20% ½W .....doz	1.00
R-4	6R6012	33,000 20% ½W .....doz	1.00
R-5	6R6056	47,000 20% ½W .....doz	1.00
R-6	6R3933	220 20% ½W .....doz	1.00
R-7	6R3927	2.2 meg 20% ½W .....doz	1.00
R-8	6R2122	4.7 meg 20% ½W .....doz	1.00
R-9	17A690578	Wire wound: 22 10% 1.5W.....	.20
R-10	6R3963	100 10% 2W	.20
R-11	6R476116	270 10% 2W	.20
R-12	6R2039	68 10% ½W .....doz	1.00
R-13	6R2039	68 10% ½W .....doz	1.00
R-14	6R3933	220 20% ½W .....doz	1.00
R-15	6R6028	22,000 20% ½W .....doz	1.00
R-16	6R6032	470,000 20% ½W .....doz	1.00
R-17	6R6291	560 10% ½W .....doz	1.00
R-18	6R6032	470,000 20% ½W .....doz	1.00
R-19	6R5660	180 10% ½W .....doz	1.00
R-20	6R5683	27 10% ½W .....doz	1.00
R-21	6R6036	3300 20% ½W .....doz	1.00
R-22	6R2122	4.7 meg 20% ½W .....doz	1.00
R-23	6R6477	15,000 10% ½W .....doz	1.00
R-24	6R6012	33,000 20% ½W .....doz	1.00
R-25	18A690549	Volume Control: 1 meg; with on-off switch	1.00
R-26	6R5554	390 10% ½W .....doz	1.00
SWITCHES			
S-1	-	On-Off Switch (on vol control)..	-
S-2	40B690538	Bandswitch, AM-FM	1.15
TRANSFORMERS			
T-1	24A690544	FM Antenna Input Transformer....	.50
T-2	24K691878	BC Oscillator Coil	.50
T-3	24B690540	1st FM IF Transformer (orange dot): 10.7 mc; complete with capacitors and cores, less shield	1.60
T-4	24B692193	AM IF Transformer (blue dot): 455 Kc; complete with capacitors and cores; less shield....	1.15
T-5	24B690541	2nd FM IF Transformer (yellow dot): 10.7 mc; complete with capacitors and cores; less shield	1.60
T-6	24B692193	AM Diode Transformer (blue dot): 455 Kc; complete with capacitors and cores; less shield....	1.15
T-7	24B690542	Ratio Detector Transformer: 10.7 mc; complete with capacitors, cores, and shield.....	2.00
T-8	25B690536	Audio Output Transformer.....	1.25

PART NUMBER	DESCRIPTION	LIST PRICE
CHASSIS PARTS - MECHANICAL		
43A4326	Ball, steel: 1/8" dia (pointer detent).....doz	.15
1X690717	Bracket Assembly, tuning core mtg: includes shoulder rivet & anti-backlash clip	.30
7K692144	Bracket, loop mtg	.10
7K692146	Bracket, rectifier mtg	.05
7C690567	Bracket, tuner mtg (gang mtg).....	.35
43A692172	Bushing, pointer shaft: brass	.10
42K690561	Clip, anti-backlash: single (on core mtg bracket)	.05
42A690560	Clip, anti-backlash: double (on tuner mtg bracket)	.05
42B482867	Clip, spring: blued finish (holds IF transformers) .....doz	.25
1X692227	Collar Assembly, pointer detent: with pin	.15
11M488137	Cord, dial: core drive .....yd	.10
11M8944	Cord, dial: pointer drive .....yd	.10
30K21859	Cord, line: with plug; 9 ft long.....	1.00
46K692165	Core, iron and screw (RF tuning core).	.40
46B692164	Core, iron and screw: green dot (osc tuning core)	.40
5S7866	Eyelet: .125 x .091 brass; nkl pl (core drive cord retainer).....per/c	.50
5A19658	Eyelet, speaker mtg .....doz	.20
37A12691	Grommet, rubber (spkr cushion).....doz	.35
14A690548	Insulator, bakelite (vol control & bandswitch mtg)	.05
14A482844	Insulator, line cord: fibre; without lugs .....doz	.25
14K692187	Insulator, line cord: fibre; with lugs	.05
4S9751	Lockwasher, int-ext: #8; cad pl (pointer drive pulley mtg).....per/c	.50
29R3036	Lug, soldering: #8 (on spkr mtg screw) .....doz	.20
29R5285	Lug, soldering: #8 (on FM ant lead) ..	.05
2S70019	Nut, hex: 4-40 x 1/4; cad pl (tuning core mtg) .....per/c	.50
2S7051	Nut, hex palnut: 3/8-32 x 9/16; cad pl (vol control & bandswitch mtg).doz	.15
35K691846	Pad, rubber: 1 hole (gang mtg).....doz	.15
35A691845	Pad, rubber: 2 hole (gang mtg).....doz	.25
1X692216	Pulley Assembly, pointer drive: 3½" dia:	.30
49A690562	Pulley, core drive: brass	.15
5S8497	Rivet: .088 x 1/8 stl; nkl pl (anti-backlash clip mtg) .....per/c	.50
5S7771	Rivet: .088 x 3/16 stl; nkl pl (min socket mtg) .....per/c	.50
5S7774	Rivet: .088 x 1/4 stl; nkl pl (noval socket mtg) .....per/c	.50
5S7707	Rivet: .122 x 5/32 stl; nkl pl (term strip mtg) .....per/c	.50
5K13896	Rivet, shoulder (on core mtg brkt).doz	.15
3S7477	Screw, machine: 8-32 x 1/4 plain hex head; thread cutting type; cad pl (loop mtg) .....doz	.15
3S7205	Screw, machine: 8-32 x 1/4 slotted locking head; cad pl (gang mtg)...doz	.15
3S7163	Screw, machine: 8-32 x 1/4 plain hex head; cad pl (pointer drive pulley mtg) .....per/c	.50
3S488011	Screw, machine: 8-32 x 5/8 slotted locking hex head; cad pl (spkr mtg)doz	.20
3S2695	Screw, sheet metal: #6 x 3/16 PKZ plain hex head; cad pl (tuner bracket mtg) .....per/c	.50
3S490851	Screw, sheet metal: #6 x 1/2 PKA plain hex head; cad pl (loop mtg brkt)per/c	.50
3S490325	Screw, sheet metal: #6 x 1-1/8 PKZ plain hex head; cad pl (selenium rectifier mtg) .....doz	.15
3S7103	Setscrew: 8-32 x 1/8 Allen head; cad pl (core drive pulley mtg).....	.10
3S9705	Setscrew: 8-32 x 1/4 Allen head; cad pl (pointer adj sleeve mtg).....	.10
1X692225	Shaft & Pulley Assembly, pointer: complete, but less pointer	1.10
47K690573	Shaft, tuning: brass (fits over band-switch shaft).....	.25
9K485936	Shield, coil (for IF transformers)....	.20
26A481521	Shield, tube: spring type .....doz	.50
43K692185	Sleeve, pointer: die cast; less pointer adj setscrew	.40
9K484167	Socket, tube: miniature; 7-prong	.20
9B692196	Socket, tube: noval; 9-prong (for V-5)	.15
9K692197	Socket, tube: noval; 9-prong (for V-2)	.15
41A690598	Spring, coil: 7 turns; cosmoline dipped (FM-RF core mtg).....doz	.15
41K691840	Spring, coil: 8 turns; copper plated (FM osc core mtg).....doz	.20
41A690732	Spring, compression (in pointer sleeve).....doz	.15
41A14244	Spring, tension (core & pointer drive cord).....doz	.55
31K85348	Strip, terminal: 1 insulated lug; #2 mtg; 3/8" spacing	.05
31K86126	Strip, terminal: 2 insulated lugs; #2 mtg; 3/8" spacing	.05
31K37493	Strip, terminal: 2 insulated lugs; #2 mtg; 1/2" spacing	.05
31K14655	Strip, terminal: 3 insulated lugs; #3 mtg; 3/8" spacing .....doz	.80
31K22174	Strip, terminal: 4 insulated lugs; #4 mtg; 3/8" spacing	.10
31K470747	Strip, terminal: 5 insulated lugs; #3 mtg; 3/8" spacing	.15
29A70422	Terminal, screw (antenna terminal on loop back) .....doz	.35
4A73639	Washer, 'C' (holds tuning shaft)....doz	.20
4K692188	Washer, 'C' (pointer shaft mtg).....doz	.20
4A70873	Washer, fibre (pointer drive pulley mtg) .....doz	.15
4S7582	Washer, flat: ½ x .195 x .033; cad pl (pointer drive pulley mtg).....per/c	.50
4S7614	Washer, flat: 11/16 x 11/64 x .036 stl; cad pl (loop mtg).....doz	.15
4K690571	Washer, shoulder: fibre (vol control & bandswitch mtg).....doz	.20
4K482859	Washer, shoulder: fibre (loop mtg brkt) .....doz	.15
4B600149	Washer, spring (under pointer shaft pulley) .....doz	.20
CABINET PARTS		
16E691951	Cabinet, table model: plastic; brown...	-
36B692149	Knob, control: brown plastic (tuning knob)	.20
36B692150	Knob, control: brown plastic (AM-FM selector)	.35

PART NUMBER	DESCRIPTION	LIST PRICE
6B692181	Knob, control: brown plastic (volume control)	.55
S7650	Lockwasher, internal: #6; cad pl (pointer mtg) ...per/c	.50
S7005	Nut, hex: 6-32 x 1/4 stl; cad pl (pointer mtg)...per/c	.50
3B692039	Medallion: brass plated	.90
8A25507	Plug, split (mounts loop to cabinet) ...doz	.15
2B692173	Pointer, dial	.35

PART NUMBER	DESCRIPTION	LIST PRICE
3S2999	Screw, machine: 6-32 x 5/8 slotted locking hex head; cad pl (medallion mtg) ...doz	.15
3S3371	Screw, thread cutting: #8 x 3/8 plain hex head; cad pl (chassis mtg)...per/c	.50
4S1720	Washer, flat: 3/8 x .156 x .030 stl; cad pl (medallion mtg)...per/c	.50
4S1765	Washer, flat: ½ x .147 x .015 stl; cad pl (pointer mtg)...per/c	.50
4K485672	Washer, spring (pointer mtg)...doz	.15

PRICES SUBJECT TO CHANGE WITHOUT NOTICE